

DAVID SANTAMARIA

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WORK EXPERIENCE

ZeroEntropy (YC W25)

Contract Software Engineer

February 2026 – March 2026

Hit a perfect 100% lighthouse SEO score on zeroentropy.dev by migrating to static HTML generation using Astro and MDX-based blogs

Rebuilt the engineering blog on MDX with custom typed components, reducing posts to validated markdown file with auto-generated metadata

Contract Software Engineer

January 2025 – March 2025

Built dashboard.zeroentropy.dev in Typescript with a Python FastAPI backend, giving users a frontend interface to interact with the ZeroEntropy API

Integrated top-k semantic search across user document collections with debounced inputs, paginated ranked results, and graceful error handling, enabling users to query their data without direct API interaction

Google

May 2024 – August 2024

Software Engineer Intern

Identified 6 previously unknown GCP network anomalies by building a C++ telemetry validation pipeline for dozens of petabytes of data

Diagnosed a VPS outage blocking 50+ interns from their dev instances and routed them to a workaround, restoring their ability to work

UCF Institute for Simulation & Training

October 2023 – January 2024

Undergraduate Research Assistant

Initial developer on TITENN; validated an experimental ML-optimized network by building PoC firmware in C for ESP32 and PIC microcontrollers with BLE integration, validated by an AR simulation of military combat training

VertexGraph

May 2022 – August 2022

Software Engineer Intern

Added user permission roles to the access gateway of a pre-launch zero-trust platform, then fixed defects and refactored code across the gateway and broader product

TECHNICAL STRENGTHS

Languages:	C++, C, Python, JavaScript, TypeScript, SQL, Bash, Java, HTML, CSS
Systems & Infrastructure:	Linux, Git, Docker, AWS, Terraform, nginx, QEMU, Modal, perf, BPF
Web Development:	React, Next.js, Node.js, FastAPI, Prisma
Databases:	PostgreSQL, Redis, NoSQL, pgvector, Qdrant

PROJECTS

HorizonOS | [demo](#)

June 2025 – Present

x86_64 kernel in C with 4-level paging, APIC interrupt handling, PS/2 keyboard driver, DMA-based AC97 audio driver, uACPI integration, PCI enumeration, and kernel shell

Home Lab | dsanta.dev/services

March 2026 – May 2026

AWS infrastructure provisioned with Terragrunt/Terraform; services (Gitea, pastebin, wiki, file transfer, uptime monitor) containerized in Docker with gVisor sandbox isolation behind nginx

COMPETITIVE PROGRAMMING COMPETITIONS

ICPC Southeast Regional Contest 2022: Division 2 - 1st

EDUCATION

University of Central Florida | Orlando, FL

January 2021 – December 2024

B.S. in Computer Science